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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/532,966

04/27/2005

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EXAMINER

MARCHESCHI, MICHAEL A

ART UNIT

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1793

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/532,966	Applicant(s) SATO ET AL.	
	Examiner Michael A. Marcheschi	Art Unit 1793	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☒ Claim(s) 2 and 15-19 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>4/27/05, 11/18/05</u> | 6) <input type="checkbox"/> Other: ____ |

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Claims 7, 8, 11, 16, 17, 18, 19, 20 and 21 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 7 is indefinite because the limitation "said polymerization" lacks literal antecedent basis because claim 1 does not literally define "polymerization".

Claim 8 is indefinite because the limitation "the oxidizing agent" lacks antecedent basis because claim 3 never defines that an oxidizing agent is present.

Claim 11 is indefinite as to the limitation "metal included in the metal layer" because this limitation implies that the layer contains other components other than the metal, however, claim 1 only defines that the layer is a metal, thus the scope of this claim is outside the scope of claim 1.

Claim 16 is indefinite as to the limitation "which contains recesses so as to fill an cover the recesses" because the examiner is unclear as to what this is defining. The claim is not defined in a clear and concise manner as to enable complete understanding of said claim. What contains recesses? Is it the metal layer or the wafer? In addition, what fills and covers the recesses? Is it the metal layer that does this?

Claim 17 is indefinite as to the limitation "barrier metal layer is formed on a top of the wafer which contains recesses" because the examiner is unclear as to what this is defining. The claim is not defined in a clear and concise manner as to enable complete understanding of said claim. What contains recesses? Is it the barrier metal layer or the wafer? In addition, is the barrier metal layer the metal layer defined in claim 16 or is it a barrier metal layer defining a

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different layer than the metal layer of claim 16? If the first scenario is correct, the claim should be rewritten to clearly define this (wherein said metal layer is a barrier metal layer).

Claim 18 is indefinite as to the limitation "metal included in the metal layer" because this limitation implies that the layer contains other components other than the metal, however, claim 1 only defines that the layer is a metal, thus the scope of this claim is outside the scope of claim 1.

Claim 21 is indefinite because the entire claim is not defined in a clear and concise manner as to enable complete understanding of the subject matter sought. In addition, what is the last two lines of this claim defining? What contains recesses? Is it the metal layer or the wafer? In addition, what fills and covers the recesses? Is it the metal layer that does this? This claim should be rewritten in a more clear and concise manner.

Claims 19 and 20 are indefinite because they depend on an indefinite claim.

Claim 15 is objected to because of the following informalities: The phrase "abrasive grains utilize" should be changed to "abrasive grains are". Appropriate correction is required.

Claims 2 and 16-19 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. These claims do not further define the composition in terms of the compositional background of said composition. The use and how the polymerization is carried out do not further define the components of the composition.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-21 are rejected under 35 U.S.C. 102(e) as anticipated by Pasqualoni et al. (671).

The reference teaches in sections [0019], [0027], [0029], [0035], [0038] and [0040] and the claims, a polishing composition comprising an abrasive (alumina, etc.), an oxidizer (hydrogen peroxide, etc.), benzotriazole, and an organic acid. The organic acid can be a mixture of (1) acetic acid and (2) gallic acid or tannic acid (tannic acid is a tannin). The composition is used to polish copper or tantalum metals.

The claimed invention is anticipated by the reference because the reference teaches a composition which comprises all of the claimed components. With respect to the formation of a polymer film on the metal layer, since the same metal is polished and the same additive (gallic acid or tannic acid (tannic acid is a tannin)) is used, the results are inherent absent evidence to

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the contrary. In the alternative, the patentability of a composition is based on its components and not on the functional of the components. In view of this, the compositions of instant claims 1-15 are anticipated by the reference. With respect to claims 16-19, these claims are defining the use of the composition and as is well known that the use of a composition does not impart patentability to composition claims. In addition, the reference uses the composition to polish the same materials. With respect to claims 20-21, the reference discloses polishing the same metals with the composition.

Claims 1-21 are rejected under 35 U.S.C. 102(e) as anticipated by Schroeder et al. (763).

The reference teaches in sections [0018], [0019], [0035]-[0041], a polishing composition comprising an abrasive (alumina, etc.), an oxidizer (hydrogen peroxide, etc.), an organic acid (claimed materials), benzotriazole, and catechol, pyrogallol, tannic acid (tannic acid is a tannin) and the like. The composition is used to polish copper or tantalum metals (sections [0046]-[0047]).

The claimed invention is anticipated by the reference because the reference teaches a composition which comprises all of the claimed components. With respect to the formation of a polymer film on the metal layer, since the same metal is polished and the same additive (tannic acid (tannic acid is a tannin), etc.) is used, the results are inherent absent evidence to the contrary. In the alternative, the patentability of a composition is based on its components and not on the functional of the components. In view of this, the compositions of instant claims 1-15 are anticipated by the reference. With respect to claims 16-19, these claims are defining the use of the composition and as is well known that the use of a composition does not impart patentability

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to composition claims. In addition, the reference uses the composition to polish the same materials. With respect to claims 20-21, the reference discloses polishing the same metals with the composition.

Claims 1-9 and 14-21 are rejected under 35 U.S.C. 102(b) as anticipated by WO 99/02623.

The reference teaches in the abstract, page 3, line 3-page 4, line 9 and the claims, a polishing composition comprising an abrasive (alumina, etc.), an oxidizer (hydrogen peroxide, etc.), benzotriazole, and an organic acid (salicylic acid). Other compounds (plural) can be used including catechol, pyrogallol, gallic acid, tannic acid (tannic acid is a tannin) or other organic acids (i.e. tartaric acid). The composition is used to polish copper or tantalum metals.

The claimed invention is anticipated by the reference because the reference teaches a composition which comprises all of the claimed components. With respect to the formation of a polymer film on the metal layer, since the same metal is polished and the same additive (gallic acid or tannic acid (tannic acid is a tannin), etc.) is used, the results are inherent absent evidence to the contrary. In the alternative, the patentability of a composition is based on its components and not on the functional of the components. In view of this, the compositions of instant claims 1-9 and 14-15 are anticipated by the reference. With respect to claims 16-19, these claims are defining the use of the composition and as is well known that the use of a composition does not impart patentability to composition claims. In addition, the reference uses the composition to polish the same materials. With respect to claims 20-21, the reference discloses polishing the same metals with the composition.

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Claim 10 is rejected under 35 U.S.C. 103(a) as anticipated by WO 99/02623.

The reference teaches that other compounds (plural) can be used including catechol, pyrogallol, gallic acid, tannic acid (tannic acid is a tannin) or other organic acids (i.e. tartaric acid). The reference defines compounds, in the plural form, thus making the use of a mixture of individual compounds obvious.

The additional references cited on the 1449 have been reviewed by the examiner and are considered to be art of interest since they are cumulative to or less than the art relied upon in the above rejections. The content of the search report has also been reviewed.

Any foreign language documents submitted by applicant has been considered to the extent of the short explanation of significance, English abstract or English equivalent, if appropriate.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael A. Marcheschi whose telephone number is (571) 272-1374. The examiner can normally be reached on M-F (8:00-5:30) First Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jerry Lorengo can be reached on (571) 272-1233. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



MM

Michael A Marcheschi
Primary Examiner
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